

WHAT IS CLAIMED IS:

1. A illumination device for microscope, which has a illumination axis, comprising:

illumination means, which emits rays of
5 illumination light, for illuminating a specimen;

a field stop projection lens, which is located on the illumination axis between the illumination means and specimen;

a light deflector array, which is located on the
10 illumination axis between the illumination means and field stop projection lens in conjugation with the specimen, the light deflector array having micro optical deflection portions, which individually deflect the rays of illumination light from the illumination
15 means; and

switch means for switching between a state in which the rays of illumination light is applied to the specimen and a state in which the rays of illumination light is not applied to the specimen.

20 2. The illumination device according to claim 1, wherein the illumination means comprises a light source.

3. The illumination device according to claim 1, wherein the illumination means comprises light sources,
25 and the light deflector array is located on the illumination axis common between the light sources and the field stop projection lens.

4. The illumination device according to claim 1,
wherein the switch means comprises a shutter, which is
allowed to open and close, located on the illumination
axis between the light deflector array and the field
5 stop projection lens, and prevents transmission of the
rays of illumination light as necessary.

5. The illumination device according to claim 2,
wherein the switch means comprises a shutter, which is
allowed to open and close, located on the illumination
10 axis between the light source and the field stop
projection lens, and prevents transmission of the rays
of illumination light as necessary.

6. The illumination device according to claim 3,
wherein the switch means comprises shutters, which are
15 allowed to open and close, and each of the shutters is
located on the illumination axis between the light
source and the field stop projection lens, and prevents
transmission of the rays of illumination light from the
corresponding light source as necessary.

20 7. The illumination device according to claim 1,
wherein the illumination means comprises an LED light
source, and the switch means comprises an LED drive
controller, which switches on/off the LED light source.

8. The illumination device according to claim 1,
25 wherein the illumination means comprises LED light
sources, the light deflector array is located on the
illumination axis common between the LED light sources

and the field stop projection lens, and the switch means comprises an LED drive controller, which switches on/off of the LED light sources.

5 9. The illumination device according to claim 1, further comprising a drive controller, which controls a deflection operation of the micro optical deflection portions and a switching operation of the switch means.

10 10. The illumination device according to claim 9, wherein the drive controller controls the switching operation of the switch means after the deflection operation of the micro optical deflection portions.

15 11. The illumination device according to claim 4, further comprising a drive controller, which controls a deflection operation of the micro optical deflection portions and opening and closing operations of the shutter, the drive controller opening the shutter after the deflection operation of the micro optical deflection portions.

20 12. The illumination device according to claim 5, further comprising a drive controller, which controls a deflection operation of the micro optical deflection portions and opening and closing operations of the shutter, the drive controller opening the shutter after the deflection operation of the micro optical deflection portions.

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13. The illumination device according to claim 6, further comprising a drive controller, which controls a

deflection operation of the micro optical deflection
portions and opening and closing operations of the
shutters, the drive controller opening a shutter
corresponding to a light source to be used after the
5 deflection operation of the micro optical deflection
portions.

14. The illumination apparatus according to
claim 7, further comprising a drive controller, which
controls a deflection operation of the micro optical
10 deflection portions, the LED drive controller turning
on the LED light source after the deflection operation
of the micro optical deflection portions is controlled
by the drive controller.

15. The illumination apparatus according to
15 claim 8, further comprising a drive controller, which
controls the deflection operation of the micro optical
deflection portions, the LED drive controller turning
on an LED light source to be used after the deflection
operation of the micro optical deflection portions is
20 controlled by the drive controller.